
National ISDN 2 TR-1268 Primary Rate Interface

The National ISDN-2 TR-NWT-001268 Primary Rate Interface (PRI) feature provides an Integrated Services Digital Network (ISDN) PRI interface to the Public Exchange/Central Office that conforms to portions of the National ISDN-2 (NI-2) specification as developed by the National ISDN users Forum (NIUF) and documented in Bellcore Specification TR-1268.

The Meridian 1 supports the following call services on the NI-2 interface:

- Basic call service
- Circuit-mode bearer capabilities (speech, 3.1 kHz audio, 64 kbps digital, and adapted 56 kbps to 64 kbps digital)
- Enbloc sending
- Channel negotiation
- In-band tone and announcement
- Calling number delivery
- Calling Party Number Privacy, using the Calling Party Name feature (*67)
- A back-up D-channel is provided to improve the reliability of an ISDN PRI interface that consists of more than one Digital Signal Level 1 (DS1) facility. The primary and back-up D-channels reside on the 24th channel of separate DS1 facilities. Both D-channels provide signaling information for the interface, but only one can be in service at any given time.

The Meridian 1 does not support the following TR-1268 functionalities:

- Packet Mode Unrestricted Digital Information bearer capability
- Circuit Mode Unrestricted Digital Information at $n \times 64$ kbps, H_0 and H_{11} channels bearer capability (due to the lack of hardware support of providing contiguous timeslots)
- Up to two Calling Party Number information elements for terminating calls
- Up to two redirecting numbers provided for originating and terminating calls
- Subaddressing
- Calling party number privacy on subscription basis
- Call-by-Call Service Selection, and
- Switched DS1/Switched Fractional DS1 Service.

Operating parameters

The existing Network Call Redirection limitation on unsupported interface applies to the NI-2 interface. The Meridian 1 NI-2 interface generates the Redirecting Number (RN) Information Element (IE) of the most recent instance of redirection of an internal call forward call. If the Meridian 1 receives an RN IE at the NI-2 interface, it passes it along. If there are more than one RN IEs, the later ones are treated as duplicates and are discarded.

A maximum of 16 DS1 loops can be supported when both the primary and backup D-channels are configured (i.e., $16 \times 24 - 2 = 382$ B-channels); however, the Meridian 1 is limited to 254 trunks in a single route. Stepping to a second route is permitted only if the Meridian 1 is supported by a far end switch.

The ISDN NI-2 TR-1268 PRI feature requires a DTI/PRI card and a D-channel Handler card.

Feature interactions

Integrated Service Access (ISA)

Integrated Service Access is not supported on this interface.

ISDN Signaling Link (ISL)

ISDN Signaling Link is not supported on this interface.

Feature packaging

The ISDN NI-2 TR-1268 PRI Basic Call feature is contained in North American National ISDN Class II Equipment (NI2) package 291.

The following packages are also required to activate this feature:

- Integrated Services Digital Network (ISDN) package 145
- 1.5 Mbps Primary Rate Access (PRA) package 146, and
- Multi-purpose Serial Data Link (MSDL) package 222.

Feature implementation

The following two service changes are required for this feature: define a new interface type for a given D-channel; and define the download.

LD 17 – Configure the primary D-channel.

Prompt	Response	Description
REQ	NEW/CHG	Add/change configuration information.
TYPE	CFN	Configuration Record.
ADAN	NEW, CHG, OUT, DCH xx	Add, change, or remove primary D-channel data where: xx = 0,1, ... 63.
CTYP	MSDL	Supported only on Multi-purpose Serial Data Link (MSDL) or Downloadable D-channel cards.
...		
USR	PRI	D-channel mode.
IFC	NI2	NI-2 TR-1268 interface type.

CO_TYPE	(STD), ATT	Central Office switch type (prompted only if IFC = NI2). STD = Totally compatible with Bellcore standard. ATT = AT&T 5ESS.
PRI	III nn	III = PRI loop using the same D-channel (0,1,...159) nn = Interface identifier (2,3,...15)
...		

LD 17 – Configure the backup D-channel.

Prompt	Response	Description
REQ	NEW/CHG	Add/change configuration information.
TYPE	CFN	Configuration Record.
ADAN	NEW, CHG, OUT, BDCH yy	Add, change or remove backup D-channel data, where: yy= 0,1, ... 63.
PDCH	xx	Associated primary D-channel, where: xx = 0,1, ... 63.
CTYP	MSDL	Card type.
...		

LD 16 – Use this overlay to define a route data block (for ISDN PRI).

Prompt	Response	Description
REQ	NEW, CHG	New or change.
TYPE	RDB	Route data block.
...		
DGTP	PRI	Digital route type.
IFC	NI2	New DCH interface ID.
...		

Feature operation

No specific operating instructions are required to use this feature.